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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/628,929	07/28/2000	Joe Cargnelli	9351-21/HSF	3626

1059 7590 01/21/2005

BERESKIN AND PARR
SCOTIA PLAZA
40 KING STREET WEST-SUITE 4000 BOX 401
TORONTO, ON M5H 3Y2
CANADA

EXAMINER

FORD, JOHN K

ART UNIT	PAPER NUMBER
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3753

DATE MAILED: 01/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/628,929

Applicant(s)

CARGNELLI ET AL.

Examiner

John K. Ford

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Sept 20, 2004 and July 20, 2004
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4, 6-9, 19-31 is/are pending in the application.
- 4a) Of the above claim(s) 21-26 and 30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 6-9, 19, 20, 27-29 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Applicant's amendment dated September 17, 2004 has been studied carefully.

The Examiner is still confused as to whether the fuel cell is part of the claims (i.e. claims 1 and 27). Apparently it is, because of the recitation of the fuel cell in paragraph (e) of these claims. Is that correct? In other words, there would be no infringement of claim 1 if all the steps were practiced but the humidified gas were supplied to something other than a fuel cell. Is that correct? An answer to both questions is required in response to this action, so that the Examiner can properly understand exactly what applicant is claiming and/or arguing.

Regarding claim 30, applicant has indicated that it is non-elected, because claim 21 is non-elected. When claim 21 is cancelled, claim 30 will have to be cancelled. Claim 21 is withdrawn because applicant has previously indicated it was not readable on the elected species.

The comments in the after final amendment of July 20, 2004 are addressed in the rejection that follows. Claims 1, 2, 4, 6-9, 19, 20, 27-29 and 31 are examined here. Claims 3, 5 and 10-18 have been cancelled. Claims 21-26 and 30 are withdrawn.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 7-9, 19, 27-29 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of JP 5-256468, Weitman and either Fleck and/or applicant's admitted prior art.

JP' 468 teaches a steam source 24 connected to a mixing chamber 20 for mixing the injection steam with incoming process gas for compressor 23. This highly saturated process gas

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is subsequently cooled below its dew-point by cooler 25 and a separator 28 discharges condensate. A heater 31 subsequently is used to heat the process stream to a desired temperature. One additional refinement of JP' 468 is the use of a humidity controller 30 (controlled by a dew-point instrument 29) downstream of the saturating cooler 25. In view of the teaching of Weitman, which shows a saturator followed by a reheater and which lacks the refinement discussed above (i.e. the use of a humidity controller 30 by a dew-point instrument 29), it would have been obvious to have omitted the dew-point instrument 29 and controller 30 in JP' 468 to attain a less expensive structure. In general, the omission of an element and its associated function is not deemed to be patentable, In re Karlson, 136 USPQ 184.

Alternatively, to have replaced saturator unit 1 of Weitman with units 20, 24 and 25, 27 & 28 of JP' 468, which perform the same function, would have been obvious to reduce the overall size of the saturation section, and advantageously permit high temperature saturation to take place (i.e. by the use of steam).

Regarding the step of providing a gas of controlled humidity and temperature to a fuel cell, it is submitted that it is well known in the art of fuel cells to control temperature and humidity of the process gas (typically air) to a predetermined level to assure maximum efficiency as taught by Fleck. Fleck also teaches that where the system is exposed to freezing temperatures it can be provided with "suitable insulating measures or by a heating system." (Col. 3, lines 28-34). To have insulated all of the conduits in Weitman/JP' 468 to prevent freezing problems when using them to supply the process air of controlled temperature and humidity to a fuel cell would have been obvious to one of ordinary skill.

Likewise, Applicant also admits in his remarks of July 20, 2004, page 8, that fuel cells must be precisely conditioned to operate properly. With regard to fuel cells applicant admits that they need precisely controlled temperature and humidities to operate properly (July 20, 2004 remarks, page 8):

“It is commonly necessary for the temperature and humidity conditions to be very tightly controlled, since small variations in temperature and humidity can adversely affect fuel cell performance; more importantly, improper temperature and humidity conditions can result in damage to the fuel cell and/or to flooding leading to a drastic reduction in performance.”

Also see applicant's specification page 2, lines 10-13, incorporated here by reference.

In view of either Fleck and/or applicant's own admissions, it would have been obvious to have used the JP' 468/Weitman combined prior art to condition a fuel cell because both JP' 468 and Weitman are concerned with generating precisely controlled temperatures and humidities in process fluids. Admittedly, neither JP' 468 nor Weitman explicitly contemplate bringing the precisely regulated process gas to a fuel cell, but Fleck and applicant have, respectively, disclosed and admitted that fuel cells need precisely controlled temperatures and humidities in the process fluids (e.g. air and gaseous fuel) to function properly.

Against this reality, applicant argues in the July 20, 2004 response that there is some fundamental difference between precisely controlling humidity and temperature in gas (air) delivered to a clean room versus the gas (air) delivered to a fuel cell. The Examiner disagrees. There is no difference. Both systems need precisely controlled temperatures and humidities, applicant's remark to the contrary notwithstanding. Moreover, the speed at which the system responds to changes in temperature and humidity simply isn't an issue given that none of the

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applicant's claims set any limitation on this performance criterion. Moreover, the arguments about "dead volumes" is simply incommensurate with the scope of the claims given that no limits are set on "dead volume" in any of applicant's claims. The fact that saturating air with water vapor and then cooling it below its dew-point inherently cleans the air is not a reason to reject the teachings of the prior art since applicant's system will inherently do the same thing assuming the oxidizer or fuel gas is contaminated with any sort of particulate matter, that any upstream filters have been unable to isolate and trap.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP' 468/Weitman in view of Fleck and/or applicant's admitted prior art as applied to claim 1 above, and further in view of Ebbing et al. (5,544,275) or Othmer (3,617,699).

Heaters for long delivery pipes where significant temperature may occur are well known to prevent the condensation (or freezing) of gas components. To have used either of the heaters of Ebbing or Othmer in the outlet of the prior art to keep the outlet line from experiencing undesirable condensation problems would have been obvious.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over ant of the prior art as applied to claim 19 above, and further in view of Oswalt.

Oswalt teaches a combined heater/chiller to achieve particularly high levels of regulation. To have substituted this type of chilled fluid source in place of the chilled/heated fluid sources shown in the prior art (i.e. element 27 and 31 in JP' 468 or the illustrated chilled fluid source connected to inlets 3 and 9 and outlets 4 and 10 of Weitman) would have been obvious to one of ordinary skill.

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Any inquiry concerning this communication should be directed to John Ford at telephone number (571) 272-4911.

A handwritten signature in black ink, appearing to read 'J. Ford', with a stylized flourish at the end.

John K. Ford
Primary Examiner